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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/873,978	06/12/97	KAYYEM	A-63761-17RF

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FLEHR HOHBACH TEST
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FOUR EMBARCADERO CENTER
SUITE 3400
SAN FRANCISCO CA 94111-4187

EXAMINER
MARSCHEL, A

ART UNIT	PAPER NUMBER
1631	30

DATE MAILED: 05/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
08/873,978

Applicant(s)

Kayyem et al.

Examiner

Ardin Marschel

Art Unit

1631



– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Feb 28, 2001

2a) ☐ This action is FINAL.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 47, 48, and 57-67 is/are pending in the application

4a) Of the above, claim(s) _____ is/are withdrawn from consideration

5) ☒ Claim(s) 47 and 48 is/are allowed.

6) ☒ Claim(s) 57, 58, and 60-67 is/are rejected.

7) ☒ Claim(s) 59 is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirements

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

20) ☐ Other:

Applicants' arguments, filed 2/28/01, have been fully considered and they are deemed to be persuasive to overcome the previous rejections of record. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. Regrettably, however, upon reconsideration the following rejections and/or objections are newly applied. They constitute the complete set presently being applied to the instant application.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The instant claims include conductive oligomers as well as nucleoside analogs with metallocenes thereon in contrast to the present title which is only directed to electrodes linked to nucleic acids.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claim 57 is rejected under 35 U.S.C. § 102(e) as being clearly anticipated by Marble et al. (P/N 5,700,667).

In column 13, line 59, through column 14, line 18, DNA is covalently attached to controlled pore (CPG) glass beads and then hybridized with complementary sequences such as a complementary T7 promoter. The double stranded DNA thus formed is deemed a conductive oligomer as required in instant claim 57. The CPG - double stranded DNA is deemed to anticipate instant claim 57.

Claims 66 and 67 are rejected under 35 U.S.C. § 102(e) as being clearly anticipated by Sargent et al. (P/N 5,601,982).

Sargent et al. discloses the incorporation of nucleotide analogs with attached metallocene or ferrocene into polynucleotides as given in column 3, lines 4-42. See lines 36-37 regarding metallocene or ferrocene. Such incorporation is well known to occur via nucleotide triphosphates as required in the instant claims.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered

therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103(a).

Claims 62-65 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sargent et al. (P/N 5,601,982).

The above Sargent et al. disclosure indicates that metallocene or ferrocene nucleotides are utilized in polynucleotide synthesis. Such analogs are well known to be prepared either by base modification prior to conversion to the triphosphate or after.

Thus, it would have been obvious to someone of ordinary skill in the art at the time of the instant invention to prepare various types of metallocene nucleosides as optional substrates for preparation of nucleotides for incorporation into polynucleotides thus resulting in the practice of the instant invention.

Claims 58, 60, and 61 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Heller et al. (P/N 5,849,486).

Heller et al. describes the practice of electrodes with nucleic acids attached thereto as shown in Figures 2A through 5 and 16A through 16D. This arrangement may include a permeation layer which is reasonably interpreted as a passivation layer as instantly claimed. This is additional layering is described, for example, in column 10, lines 1-17, and in column 17, line 64,

through column 18, line 35. The attachment of nucleic acid to the electrode via the permeation layer is described in column 18, lines 37-55 via poly-l-lysine, for example, which is reasonably interpreted as an insulator.

Thus, it would have been obvious to someone of ordinary skill in the art at the time of the instant invention to prepare optionally various nucleic acid/permeation layered electrodes as described in Heller et al. thus resulting in the practice of the instant invention.

Claims 59 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 47 and 48 are allowed.

Papers related to this application may be submitted to Technical Center 1600 by facsimile transmission. Papers should be faxed to Technical Center 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993) (See 37 CFR § 1.6(d)). The CM1 Fax Center number is either (703)308-4242 or (703)305-3014.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., whose telephone number is (703)308-3894. The examiner can normally be reached on Monday-Friday from 8 A.M. to 4 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward, Ph.D., can be reached on (703)308-4028.


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Any inquiry of a general nature or relating to the status of this application should be directed to Patent Analyst, Tina Plunkett, whose telephone number is (703)305-3524 or to the Technical Center receptionist whose telephone number is (703) 308-0196.

May 18, 2001


ARDIN H. MARSCHEL
PRIMARY EXAMINER